



FIG. 5A

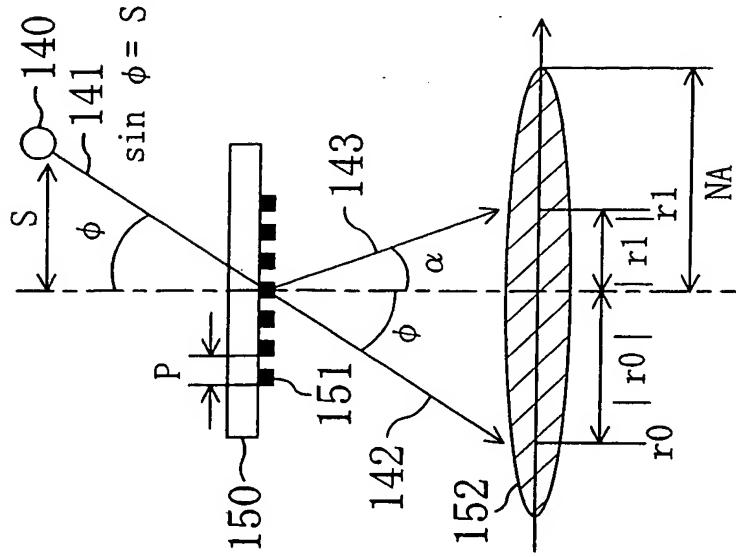


FIG. 5B

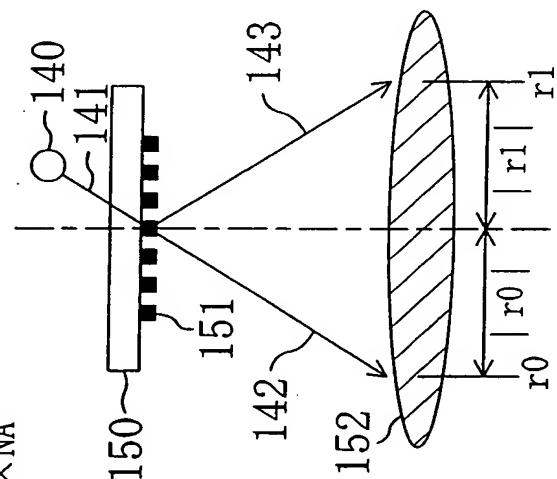
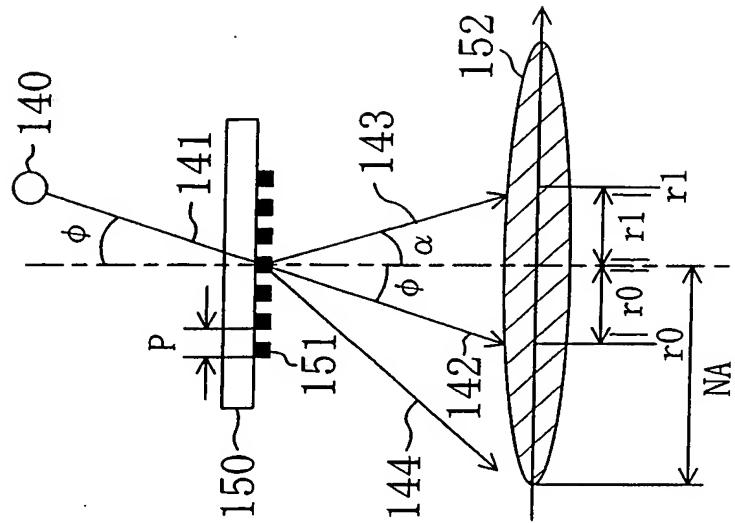


FIG. 5C



If  $r_0 = -r_1$ , focused 0th-order diffraction light and focused first-order diffraction light are in the identical phase even in a defocus state.

define

$$\begin{aligned}\sin \phi &= |r_0|, \\ \sin \alpha &= |r_1|, \\ |r_0| + |r_1| &= \lambda/P \text{ and} \\ \sin \theta_1 &= |r_0| + |r_1|\end{aligned}$$

When both +first-order diffraction light and -first-order diffraction light pass through a mask, a good defocus state cannot be obtained.

define

$$\begin{aligned}\sin \phi &= |r_0|, \\ \sin \alpha &= |r_1|, \\ |r_0| + |r_1| &= \lambda/P \text{ and} \\ \sin \theta_1 &= |r_0| + |r_1|\end{aligned}$$

FIG. 6A

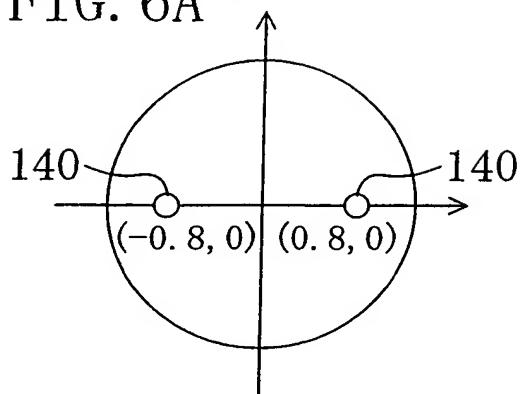


FIG. 6B

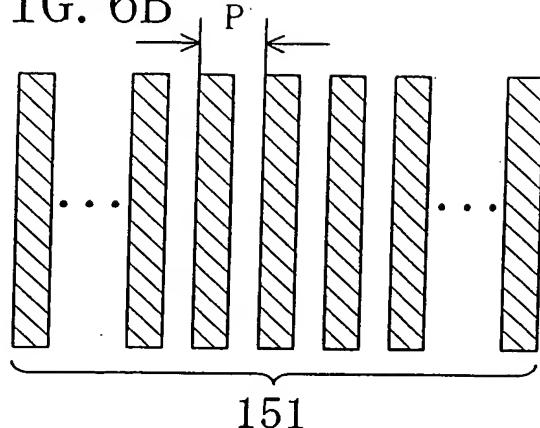


FIG. 6C

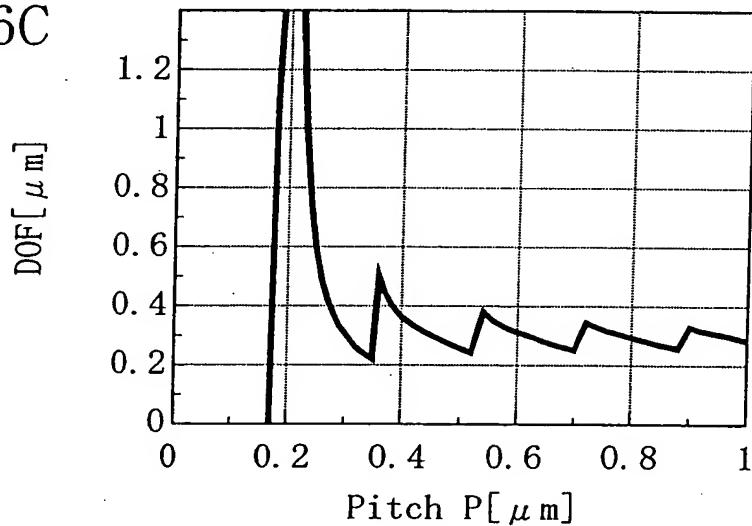
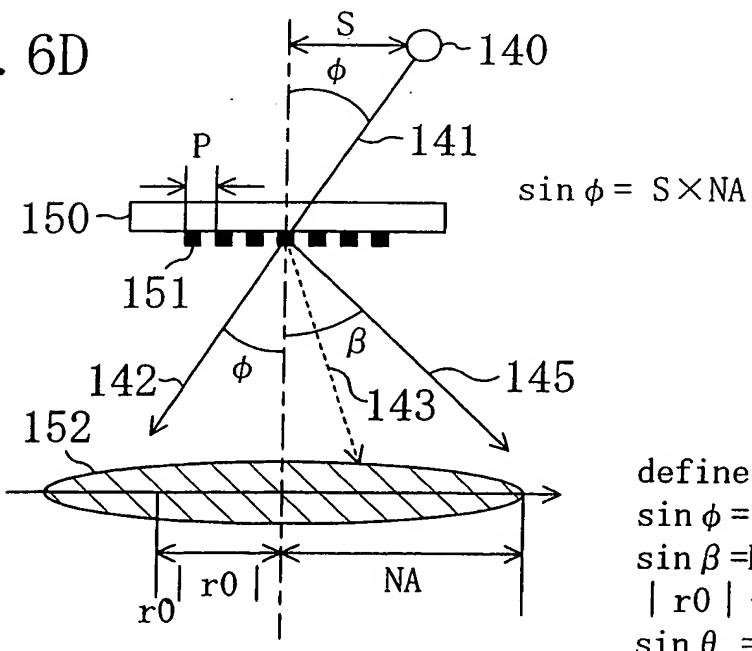


FIG. 6D



define  
 $\sin \phi = |r_0|$ ,  
 $\sin \beta = NA$ ,  
 $|r_0| + NA = 2\lambda/P$  and  
 $\sin \theta_2 = |r_0| + NA$